Mojo/ Horn Section

USER MANUAL

Produced by Vir2 Instruments

Vir2 Instruments / is an international team of sound designers, musicians, and programmers, who specialize in creating the world's most advanced virtual instrument libraries. Vir2 is producing the instruments that shape the sound of modern music.

29033 Avenue Sherman, Suite 201
Valencia, CA 91355

Phone: 661.295.0761
Web: www.vir2.com

Mojo/ Horn Section

USER MANUAL

MOJO/ REQUIREMENTS AND INSTALLATION

SYSTEM REQUIREMENTS

For Mac users, MOJO requires OS 10.4.x or greater, a G4 1.4GHz or Intel Core Duo 1.66GHz or faster, a DVD drive, and 2GB of RAM.

For Windows users, MOJO requires Windows XP or Windows Vista or greater, a Pentium or Athlon 1.4GHz or faster, a DVD drive, and 2GB of RAM.

The library requires 15GB of disk space.

Vir2 Instruments strongly recommends 4GB RAM or more and an 88-key controller in order to use MOJO to its fullest potential.

INSTALLING

The installation of MOJO is two separate steps: the installation of the Kontakt engine, and the installation of the MOJO library.

Insert the installation disc into your computer, and you will see the installers for both components. It doesn't matter which is installed first. Run each of the installers and they will guide you through the installation process.

The Kontakt installer will install the Kontakt engine, its standalone application, all of its plug-in versions, and the Service Center authorizer program. We recommend the Easy Install and that the install locations for each component are left at their default settings.

The MOJO library is approximate 14GB in size, and its installer will prompt you for the location you wish to install it. It can be installed on any available hard drive. For speed reasons, we recommend it be installed on internal or eSATA drives. Firewire can also be acceptable. External USB drives may give somewhat less optimized performance. We also recommend 7200 or 10,000rpm drives regardless of the interface used.

UPDATING & AUTHORIZING

After installation, please make sure that you are fully updated to the most recent versions of the three components that make up the MOJO package: the library (which contains all the patch information and programming), the engine (which is powered by Kontakt), and the authorizer (Service Center). It is possible that any of these components may have a more recent version than shipped in your physical package, so you should check for updates to each of these three. You can do this by visiting the vir2.com web site and checking the Support area.

After you've completed installation, MOJO will be working in demo mode, meaning it will only work for 30 minutes at a time. To fully authorize it, launch Service Center (found in the Applications folder on a Mac, or the Program Files folder on Windows) and follow its instructions. You will be prompted to enter your e-mail address and password that make up your Native Instruments account, or will be given an option to create an account if you don't already have one. Once inside the Service Center, it will give you a list of all the Native Instruments and NI-powered products on your hard drive and give you the option to activate them. You are allowed to install and use MOJO on up to two computers simultaneously.

Service Center will guide you through the process for either online (instant) activation, or offline activation.

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MOJO/ INTRODUCTION TO THE LIBRARY

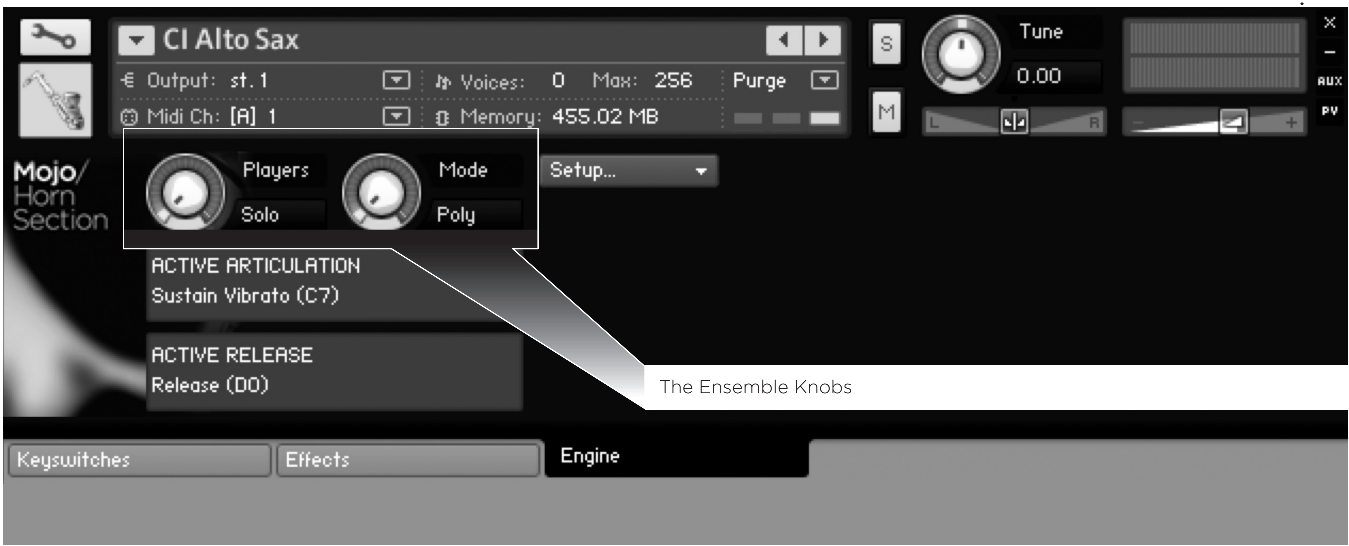
Now at the tips of your fingers is the most versatile horn section in the world, MOJO: Horn Section, offering the most flexible and innovative approach to pop, funk, jazz, and big band horns ever created in a virtual instrument. Inspired by legendary groups like Tower of Power and the big bands of decades past, MOJO is capable of emulating everything from a sultry sax solo to a screaming full big band playing at the top of their lungs.

Pushing the boundaries of sampling and scripting technology far beyond traditional sample libraries, MOJO offers a simple but feature-packed interface. No need to decide in advance which articulation you want to play. Simply load the instrument, turn the Ensemble knob to specify how many players you want playing that instrument (from a soloist to a dectet) and begin controlling the instrument from the keyboard.

RIght: Screenshot of Mojo's Interface

More than a dozen articulations are instantly loaded and intelligently handled via performance features and keyswitches. Behind the scenes, a humanizing function, smart release layers, and custom legato and vibrato tools assist the player in reproducing the ultimate dimensions in realism. Crescendos and swells sync instantly to host tempos and can be triggered in real time. Included in the instrument collection are: soprano, alto, tenor, and baritone saxophones, trumpet (open, muted, and piccolo), flugelhorn, trombone (open and muted), bass trombone, and clarinet.

The articulation list varies for each instrument, but generally includes sustains, stabs, staccatos, trills, slurs, shakes, octave runs, rise to hits, falls (including four different lengths), doits, bends, stylistic riffs, special effects, and tempo-synced swells and crescendos. All samples are recorded in 24-bit stereo using the finest preamps in the world, including a vintage Neve 1073 and a LaChapell Audio 992EG, and mics by AKG, Neumann, and Coles.



The Ensemble Knobs

MOJO/ USING KONTAKT

HOW TO ACCESS THE MOJO LIBRARY FROM KONTAKT

MOJO ships as a Kontakt-powered library, and MOJO is opened from within Kontakt, which can be run either as a standalone application, or as a plug-in hosted by any major sequencer on either Macintosh or Windows platforms. All these versions are installed by the Easy Install option of the installer.

Users who don't own a sequencer, or would like to simply boot up and be able to play MOJO, can go to their Applications folder (Mac) or Program Files folder (Windows) to launch Native Instruments > Kontakt.

Users who wish to use MOJO for sequencing or recording, or wish to play it multitimbrally, should use it in plug-in mode within a host sequencer. Kontakt supports the VST, AudioUnit, and RTAS plug-in formats. Any host sequencer that supports these plug-in formats properly will be able to use Kontakt. Instructions vary slightly from sequencer to sequencer, but the general procedure is to instantiate Kontakt as a virtual instrument plug-in, then load a MOJO instrument in Kontakt, then route a MIDI track to Kontakt so it can be triggered and recorded.

The following instructions will help standalone and plug-in users get up and running quickly with a basic track of MOJO.

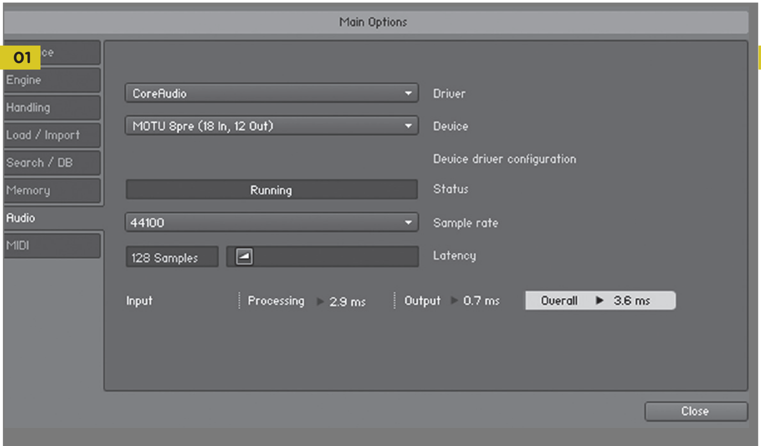
USING KONTAKT IN STANDALONE MODE

The standalone Kontakt application can be found in the Applications > Kontakt 3 folder for Mac users, or Program Files > Native Instruments > Kontakt 3 for Windows users.

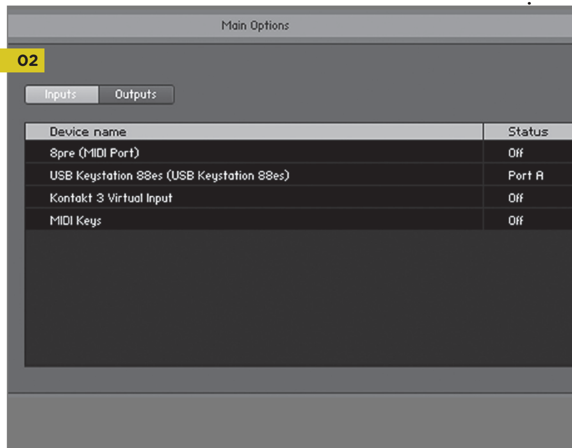
After launching the Kontakt application for the first time, you will be presented with a dialog box to set up your audio and MIDI settings. Settings will vary for each user according to the specific setup, but the important thing is to route the audio to a valid audio device, and to set the buffer reasonably low for good latency performance. We recommend 256 samples or less. The lower the latency slider, the less latency (the split second between the physical playing of the note and the sound coming out of Kontakt) will be, but the harder the computer will have to work. Typical useful values range between 128 and 256, however very fast computers may be able to handle lower values, while very slow computers may need higher values. **> [IMAGE 01]**

The MIDI page of the Options dialog box must be configured in order to let Kontakt know which MIDI device(s) to respond to. Kontakt will respond to up to four MIDI input ports (A, B, C, and D), so we recommend you switch one MIDI source on to Port A, as shown in the graphic below. **> [02]**

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More detailed information on the setup options can be found in the accompanying Kontakt manual. *Once you have completed Kontakt setup,* jump ahead to the Getting Started with MOJO section below.

USING KONTAKT AS A VST PLUG-IN IN CUBASE AND NUENDO

Users of Steinberg's Cubase or Nuendo sequencers can use Kontakt as a VST plug-in. These instructions have been prepared in Cubase 5, although Kontakt may also work in earlier versions if the computer meets the system requirements. Once the project is open, go to the Devices menu and choose VST Instruments **> [01]**

When the VST Instruments window appears, click in the first available slot in which "no instrument" is listed. **> [02]**

A popup menu will appear; choose Kontakt 3. Then, an alert box will appear asking if you want to create a MIDI track assigned to the Kontakt 3 plug-in. Click Create. **> [03]**

The Kontakt window will appear, and a MIDI track will be created, transmitting to Kontakt's MIDI channel A-1. When it is record-enabled, it will send any incoming MIDI played on your controller into Kontakt. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section below.

USING KONTAKT AS AN AUDIOUNIT PLUG-IN IN LOGIC PRO, LOGIC STUDIO, LOGIC EXPRESS, ETC.

Users of Apple's Logic can use Kontakt as an AudioUnit plug-in. These instructions have been prepared in Logic Pro 8, although Kontakt may also work in earlier versions if the computer meets the system requirements.

Once inside your Logic project, go to the Track mini-menu (in the central area of your screen) and choose Track > New... **> [04]**

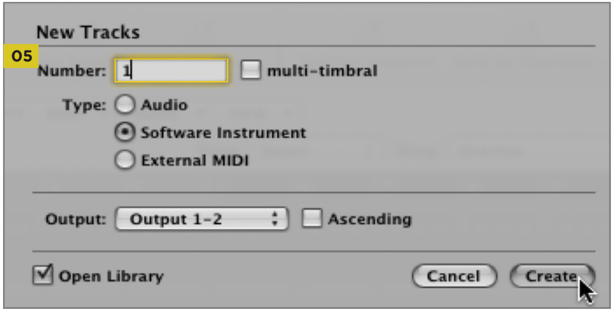
The New Tracks dialog box will appear. Make sure Soft-ware Instrument is selected, then click Create. **> [05]**

The new instrument track will be created. On the left side of the screen you will see the channel strip for that channel, including a fader, pan knob, and various insert slots. Locate the blank slot just below the letters "I/O" and above the output pair: **> [06]**

Click there, and a list of plug-ins will appear. Choose AU Instruments > Native Instruments > Kontakt 3 > Stereo. **> [07]**

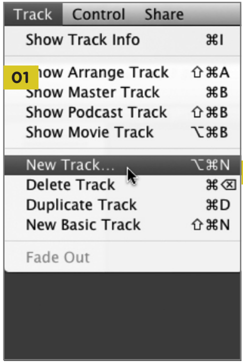
The Kontakt window will appear, and a MIDI track will be created, transmitting to Kontakt's MIDI channel A-1. When it is record-enabled, it will send any incoming MIDI played on your controller into Kontakt. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section below.



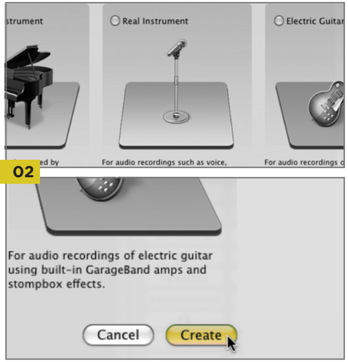




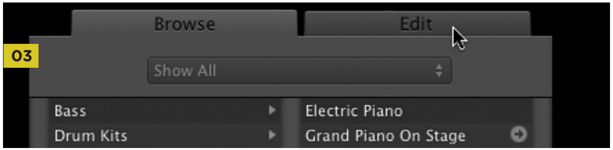




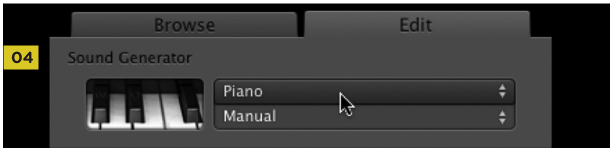
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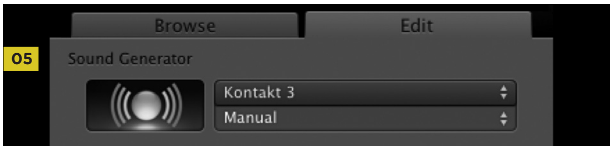
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USING KONTAKT IN GARAGEBAND

Users of Apple's GarageBand can use Kontakt as an AudioUnit plug-in. These instructions have been prepared in GarageBand 5 (which shipped with iLife '09), although Kontakt may also work in earlier versions if the computer meets the system requirements.

Once inside your GarageBand project, go to the Track menu and choose New Track. **> [01]**

A window with three choices will appear. Choose Software Instrument, then click Choose. **> [02]**

On the right side of the interface, the Browse tab will be showing. Switch to the Edit tab. **> [03]**

The Sound Generator will default to Piano. Click Piano, and a pop-up menu will appear. Choose Audio Unit Modules > Kontakt 3. **> [04]**

Note: GarageBand may default to inserting effects, such as a compressor and a visual EQ on this track. This will color the sound. If you don't want these effects used, you can remove them.

Once Kontakt 3 is selected, the icon will change to the AudioUnit icon (the ball with the sound waves radiating outward). Double-click on the icon to bring up the Kontakt window. **> [05]**

The Kontakt window will appear, and a MIDI track will be created, transmitting to Kontakt's MIDI channel A-1. When it is record-enabled, it will send any incoming MIDI played on your controller into Kontakt. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section below.

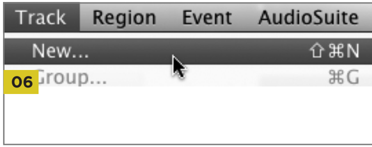
USING KONTAKT AS AN RTAS PLUG-IN IN PRO TOOLS

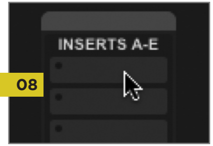
Users of Digidesign's Pro Tools (M-Powered, LE, or TDM) can use Kontakt as an RTAS plug-in. These instructions have been prepared in Pro Tools 8, although Kontakt may also work in earlier versions if the computer meets the system requirements. Once the project is open, go to the Track menu and choose New... **> [06]**

In the dialog box that appears, choose the appropriate options, such as the following: create 1 new stereo Instrument Track in samples. Then click Create. **> [07]**

Go to the Mix window and look at the channel strip for the instrument. At the very top is an area for Inserts A-E. Shown in **> [08]**

Click on the first of the five slots, and navigate through the popup menu to choose multichannel plug-in > Instrument > Kontakt 3. Shown in image **> [09]**









The Kontakt window will appear. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section.

USING KONTAKT AS AN AUDIOUNIT PLUG-IN IN DIGITAL PERFORMER

Users of MOTU's Digital Performer can use Kontakt as an AudioUnit plug-in. These instructions have been prepared in Digital Performer 6, although Kontakt may also work in earlier versions if the computer meets the needed system requirements.

Once the project is open, go to the Project menu and choose Add Track > Add Instruments... **> [01]**

In the resulting dialog box, click on the Unassigned pulldown menu, and choose Native Instruments > Kontakt 3. You can also change the number of MIDI tracks to be added, if you know you will want to use more than one. **> [02]**

The Kontakt window will appear, and a MIDI track will be created, transmitting to Kontakt's MIDI channel A-1. When it is record-enabled, it will send any incoming MIDI played on your controller into Kontakt. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section below.

USING KONTAKT AS A VST OR AUDIOUNIT PLUG-IN IN ABLETON LIVE

Users of Ableton Live can use Kontakt as a VST or Audio-Unit plug-in, depending on the version. The functionality is the same. These instructions have been prepared in Live 7, although Kontakt may also work in earlier or later versions if the computer meets the system requirements.

Once the project is open, go to the left side and click on the third icon down to show the Plug-in Devices list, scroll to the Native Instruments folder and locate Kontakt 3: **> [03]**

Drag Kontakt 3 into the central area where the text "Drop Files and Devices Here" is shown.

The Kontakt interface will appear, and it will already be actively transmitting to Kontakt's MIDI channel A-1. When it is record-enabled, it will send any incoming MIDI played on your controller into Kontakt. ***At this point,*** you can skip down in the instructions to the Getting Started With MOJO section below.

USING KONTAKT AS A PLUG-IN IN ANOTHER HOST

There are too many host programs to cover here in detail, but any modern sequencer that properly supports the VST, AudioUnit, or RTAS standards should be able to use Kontakt properly, and load MOJO within it. Consult the manual for your specific host to find out how to instantiate the Kontakt virtual instrument.

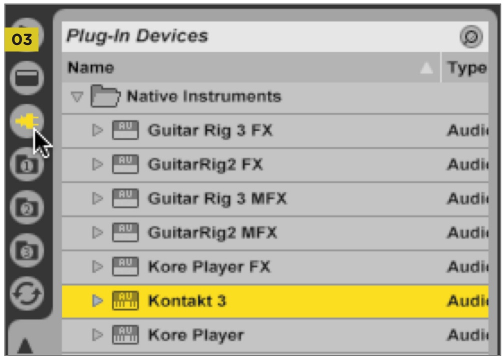
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MOJO/ USING THE CORE INSTRUMENTS

RIght: Screenshot of Mojo's Interface

GETTING STARTED WITH MOJO

Once you've followed the instructions above to get Kontakt loaded in whichever mode you prefer, Kontakt's inner workings are exactly the same. On the left side of the Kontakt interface is a sidebar called the Browser, and it has six tabs across the top: Files, Libraries, Database, Monitor, Modules, and Auto. Click the Library tab to get started with MOJO. **> [01]**

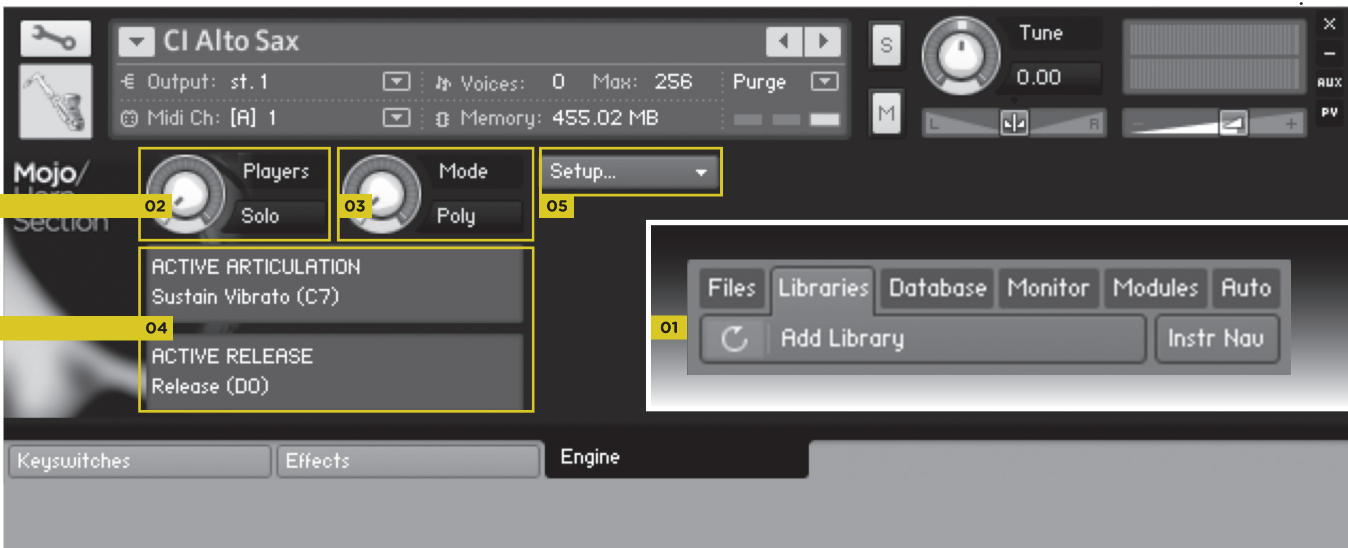
The MOJO library will appear, with buttons to access Instruments, Multis, and other materials. Clicking on the Multis or Instruments button will reveal folders of loadable patches, which will be discussed in more detail below.

USING MOJO: THE CORE INSTRUMENTS

Let's jump right in. MOJO is simultaneously designed to be very easy to use, and yet be almost infinitely tweakable. To accomplish this, much of its power is hidden below its surface. MOJO is built around the twelve core instruments, mentioned above. When any of the instruments are loaded, the interface looks like this, giving you access to the most central features, including displays to show you the currently active behaviors, and menus that lead to submenus revealing more of MOJO's power: The two visible knobs are called *Players* and *Mode*, and each will be discussed separately.

Players. MOJO is designed so that loading any instrument gives you instant access to both solo and section versions of that instrument. The Players knob can be adjusted from Solo (1 player) to up to 10 players. As you add players to the ensemble, MOJO employs a large number of techniques to create the ensemble. It spaces the players in the ensemble across the stereo field, tells them how in-tune (or out of tune) to play, and how much variation there should be within the ensemble. (All of these parameters can be adjusted and will be discussed later, in the Section menu.)

The Players Knob can be controlled via external MIDI CC as well. This makes it easy, for example, to sequence a MIDI part featuring stacked trumpet section ensemble lines, then switch to a solo trumpet for a solo part, then back to the ensemble. Since this is controlled via MIDI CC, the instructions to alter the number of people in the section (and indeed, every parameter about the section's behavior) can be written into the MIDI track, insuring perfect recall every time the sequence is played. The external MIDI CC which controls the players knob is CC#22. **> [02]**



Mode. ***The Mode knob*** is a central knob to how each instrument operates. It has three settings: **> [03 PREVIOUS PAGE]**

Poly stands for polyphonic playing, meaning that multiple notes can be played simultaneously. MOJO has a very high polyphony limit, so if your computer has enough power, it can play a large number of notes simultaneously. Adding players via the Players knob also contributes to higher polyphony.

Mono stands for monophonic playing. When in this mode, the instrument will only play one note at a time. If you play a single note on your keyboard, then hold it while you strike a second note, the first original note will stop playing, and only the second note will be heard.

Legato is similar to Mono in that only one note can be played at a time, however, when Legato mode is used, MOJO intelligently connects the first note to the second, simulating a true legato style.

Display Areas. Below the Players and Mode knobs lie two dark areas which are used to display various important pieces of information about what is being played. **> [04 PREVIOUS PAGE]**

The Active Articulation display shows which articulation is currently in use. Available articulations vary from instrument to instrument, but generally include: sustains, staccatos, stabs, swells, crescendos, bends, runs, trills, and so on. Each articulation is triggered via a silent trigger key called a keyswitch. Keyswitches will be discussed later in this manual. This display is placed here as an aid to show you which articulation is currently active.

The Active Release display shows which release articulation is currently in use. A release articulation is a sample that is triggered when a key is released (instead of the Active Articulation which is the articulation that is triggered when a key is pressed). MOJO features regular release layers (the sound of the player naturally stopping the note with their lips) as well as custom release layers such as falls of varying lengths, or slurs, and so on. Like Active Articulations, the various available release layers can be triggered via silent trigger keys called keyswitches. The display always shows you the currently active release layer.

SETUP MENU

The Setup menu contains several subpages of detailed control panels which can be used to modify the sound and behaviors of MOJO. **> [05 PREVIOUS PAGE]**



Vibrato. This page allows you to customize the behavior of the physically modeled vibrato, which is applied by moving the mod wheel (MIDI CC#1). When the mod wheel is at its minimum position, no vibrato is added. As you move the mod wheel up, a modeled vibrato is applied to the dry sound. **> [01]**

The Menu (shown as “All-Purpose”) allows you to choose the character of vibrato to use. Note that each vibrato type only takes effect after raising the mod wheel (or CC#1); simply choosing the preset will not immediately cause any change to the sound. **> [02]**

The Vibrato Knob shows how much vibrato is being applied at the moment. It moves in real time to reflect the mod wheel or CC#1.

The V Speed Knob allows you to specify the speed of the vibrato. It defaults to a standardized speed that is universally useful, but slower speeds may offer better results for ballads, while faster speeds may offer better results for uptempo songs or quick playing.

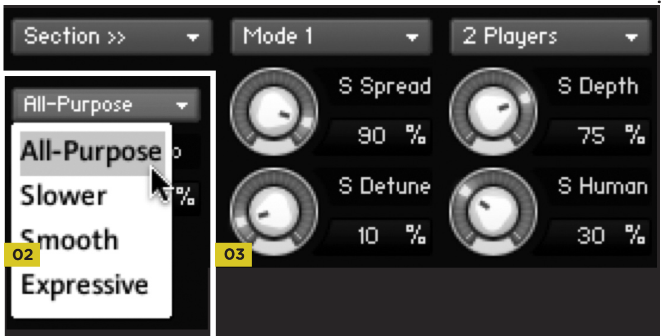
Section. The Section page allows you to customize the characteristics of the section. The settings on this page only affect the instruments when the Players knob is set to more than 1 player. Once there are two or more players in the ensemble, the Section parameters take effect and alter the way the section behaves. Section page shown in image **> [03]**

The Mode Menu lets you select between Mode 1 and Mode 2. Mode 1 uses less granular stretching and is better for more players, while Mode 2 uses more stretching but results in a fuller sound, and is better for less players.

The Players Pulldown Menu reflects the number of players selected by the Players knob. It also dictates the default number of players if the section is turned on via the keyswitch.

The S Spread Knob allows you to adjust the position of the players in the stereo field. A higher percentage means that players will be spread apart widely.

The S Depth Knob allows you to increase a random amount of timing difference between the players. Higher values will make the players play slightly less together.



The S Detune Knob allows you to increase a random amount that players will be detuned from each other. Higher values will make the players play less in tune with each other.

The S Human(ize) Knob allows you to increase a random amount of velocity randomization.

Each of the knobs in the Section page have been preset to all-purpose values that work well for most situations.

Instrument. The Instrument page gives you several controls over the overall sound and behavior of the instrument. **> [01]**

The menu that defaults to Alternate A/B specifies how the engine uses or orders the alternate samples. Almost every sample in MOJO has been recorded with multiple takes (A and B) which are an integral part of its realism. Using this menu, samples can alternate between A and B takes, or reverse (B and A), or only A, or only B. In general, the greatest realism is achieved with A/B or B/A.

The Character Menu gives seven choices between a standard character, and different shades of aggressive or mellow playing.

The Punch Knob adds additional attack to the beginning of each sample. More rhythmic playing may benefit from added punch, and attacks will sound crisper if this knob is turned up.

The Humanize Button governs an advanced series of behaviors that prevent the engine from using the same sample twice in a row, thus eliminating the infamous "machine gun" effect so common to older methods. The engine often uses adjacent samples as well as alternate takes and velocity layers to render as realistic a performance as possible. It can be defeated by disabling this button.

The H Range Knob dictates how widely the Humanize engine may pull an adjacent sample from, and can be set from 1-4. Setting this knob higher will result in more randomness but a greater risk for an odd-sounding sample that might be pitch-stretched from too far an interval.

The H Seed Knob gives the Humanize engine a virtually random start value, from 1000 to 5000.

Legato. MOJO includes an extremely advanced legato engine designed to facilitate realistic smooth legato playing. By default, MOJO is configured with parameters that result in an all-purpose optimum legato right out of the box, and is used anytime the Mode knob is set to Legato. These settings are normally enough for most legato applications. **> [02]**

For users who wish to manipulate the legato behavior in greater depth, we will explain the design here.

MOJO's legato is actually three different legato modes which are

switched between according to certain criteria. In the screenshot above, each of the three legato mode's characteristics can be altered. X-Time controls *crossfade time* (the time in which two legato notes are crossfaded), and B-Time controls *bend time* (the time in which a pitch warp or glide from one legato note to the next takes place).

With the three ***Edit Legato Buttons***, you can access more detailed behaviors for the three legato modes: adjusting the quality (lower quality results in lower CPU usage), and the parameters related to the pitch-bending of legato notes. If you select "cent" you can enter how many cents the last note is bent towards the new note, and the new note will start with a small pitch offset closer to the old note, then it subtly bends towards its true pitch. **> [03]**

The Octave Factor multiplies this cent value according to the played interval, in other words, if you play an octave interval and you set the octave factor to 5, the pitch warp is five times stronger. You can also select the interval settings which use the played interval to calculate the pitch warp, or use the glide settings which result in a full glide from each legato note to the next. Glide Up and Glide Down limit glides to only up- or only down-glides.

With ***Legato Rules* > [04]** you can tell the engine when each legato mode is used or not used. By default, legato mode 1 is triggered by slower playing (time differences of 500ms or more from one note to the next, and an interval of less than two half-steps), while









legato modes 2 and 3 are triggered by progressively faster playing. The combination of these factors allows MOJO to respond dynamically to different styles of playing and produce realistic smooth legato renderings. Each legato mode can by bypassed in the Legato Rules page, in case you need to only use one legato, or if you prefer to use MIDI CC control to alter one legato in real time.

Pitchbend. The Pitchbend page controls how the pitch bend wheel behaves. When it is selected, a pulldown menu and a knob appear:

The Mode Knob allows you to select between Mode 1 for standard pitch bend (which is the default) and Mode 2 which employs a more advanced formant-correcting algorithm for pitch bend (which only works in Solo or Legato mode). Formant-correct pitch bend uses more CPU and polyphony, but results in more realistic pitch bend. Mode 2 is particularly effective on the instruments that can naturally slide between pitches, like the Trombone and Bass Trombone.

The P Range Knob lets you set the maximum range of the pitch bend sweep (both above and below the source pitch). In Mode 1, the maximum is 12 half steps or semitones. In Mode 2, the maximum is 7 half steps or semitones.

Releases. MOJO includes extensive and intelligent release layers, which are samples of the sound of the instrument stopping a note, triggered when a MIDI key is released. The release layers contribute greatly to the realism of the instruments. The Releases page allows you control over how the release layers behave.

The Mode knob lets you choose between Mode 1, which only triggers releases if no other key is pressed anymore, and Mode 2, which plays all release notes (except in Legato mode, in which case releases are not played within a legato phrase to facilitate proper smooth legato rendering.

The Volume Knob allows you to adjust the level of the release samples. In each instrument, this has already been preset to an appropriate level for the instrument.

Speed. The Speed menu governs the behavior of both swells and crescendo articulations for each instrument. Swells and crescendos were recorded at two different lengths (long and short) for every instrument in MOJO, and have been specially designed to tempo-sync automatically. The engine will read the tempo that the host is playing at (and will even follow changing tempos), and will calculate the proper length for the swell. The Speed menu allows you to preset the desired lengths of swells and crescendos in beats.

Four pulldown menus appear, allowing long crescendos and swells to be set from 2 beats to 18 beats, and short crescnedos and swells to be set from 1 beat to 9 beats.

There is some overlap between the ranges of the short and long articulations. For example, it is possible to set long crescendos to last 4 beats and short crescendos to also last 4 beats. MOJO will utilize a different set of samples for each, and will time-stretch the crescendos to fit the current tempo. Different tempos may result in better results using one method or the other.

EFFECTS TAB

The Effects tab provides access to nine built-in audio effects that can be applied to any MOJO instrument.

Each effect features an Active button that must be clicked (enabled) before it will process the audio.

EZRoom. EZRoom is an easy-to-use integrated convolution reverb included with MOJO, and provides a quick way to instantly place the horns into a new acoustic space.

The Ezroom Menu allows you to choose which impulse response to use. A large number of impulse responses have been provided as part of the library.

The Predelay Knob lets you specify a predelay time for the convolution in milliseconds.

Dry And Wet Knobs allow you to adjust the balance of the dry (unaffected) and wet (reverb) sound to taste.

The Equalizer is a 3-band equalizer and offers control over the frequency, bandwidth, and gain of each band.

The Compressor takes the incoming audio signal, and attenuates any signal that crosses the threshold (which can be adjusted using the Threshold knob) by the ratio (which can be adjusted using the Ratio knob). In plain English, the Compressor makes loud signals a little softer, so that the dynamic range of the instrument is more limited, and therefore more listenable and more likely to sit in a mix well. In addition, once the Compressor limits the dynamic range, the overall level of the instrument can now be boosted (using the Output knob). Attack and Release knobs are also provided, which specify how fast the Compressor attenuates the signal and how long it takes for the Compressor to stop attenuating the signal after the signal goes below the threshold.

Saturation is an effect that adds density (saturation) to the sound. It has only one knob, Saturation. Raising this knob will make the sound thicker and fuller and somewhat louder.

Distortion adds overdriven, amp-style distortion to the sound. This is useful more as a special effect. Controls are provided for Drive (overall level of added distortion) and Damping (a dulling of the high frequencies as distortion is added).

Chorus adds a thickening effect by doubling the signal and de-tuning the copy. Controls are provided for Depth, Speed, and Phase.

Reverb adds natural room echo to the sound. It is different from EZRoom, which is a convolution reverb based on actual real sonic spaces. Controls are provided for Predelay, Size, Color, Damping, Pan (Stereo Width), and Return Volume.

Delay adds a time-based delay to the sound, and can be fed back into itself by engaging the Feedback parameter. Controls are provided for Delay Time (in milliseconds), Feedback, Damping, Pan (Stereo Width), & Return Volume.

Stereo allows you to control the overall stereo character of the instrument. The Spread knob allows for the increasing or decreasing of the stereo width, and the Pan knob allows for the overall panning of the instrument.

The Limiter is a brick-wall limiter, which is enabled by default. It attenuates any signal that exceeds the maximum 0dB level. In Gain, Release, and Output controls are also provided. Turning the Output knob above 0dB will result in distortion.

OTHER PATCHES

Core Instruments Lite. These instruments function identically with their Core Instruments counterparts, except they use a fraction of the number of samples of the full version. As a result, the playing and the humanizing will be less detailed, however, users who have limited amounts of RAM will be able to load more at once by using these Lite versions.

Ensembles. This folder offers various combinations of MOJO instruments, for example, Alto Sax, Tenor Sax, Trumpet, and Trombone all layered over each other. Only sustain and release articulations are included in these instruments, making them ideal for quickly building large-sounding horn sections. Note that, due to the varying range of each instrument, different areas of the keyboard feature different overlaps between the instruments, with the extreme low and high notes sometimes covered by only one of the included instruments.

Riffs feature almost two thousand prerecorded riffs played across each of the instruments. They have been grouped by instrument, tempo, and key.

Within each patch are anywhere from a few to dozens of riffs. Riffs are always mapped chromatically, starting at C2 (the C below middle C). The interface in the Riffs instruments is different than the Core Instrument. **> [01]**

The Effects menu is available and works identically to the Core Instruments, but there is a Key knob allowing for the easy transposition of the riffs into other keys. The Key knob defaults to the key of the patch loaded (C Major in this example), and a pulldown menu allows the choice of two different transposition methods.

All riffs automatically sync to host or MasterKontrol tempo. This particular instrument, while recorded at 120bpm, will play back at whatever tempo the host sequencer or the Kontakt Master Kontrol is set to.

Note that both time-stretching (syncing) and transposing are done by Kontakt's DSP, and they work best if the distance to stretch is smaller rather than larger. This example patch, which was recorded in C major at 120bpm, should sound fine if played back in C# major at 110bpm, but may sound strange if stretched to F# major and 50bpm. The best rule of thumb is to try and use riffs patches that are as close as to the key and tempo that you need them to be.

Special Effects encompass various noises that the instruments can make, such as key clicks, unusual glissandi, and more. Several hundred samples are included across the instruments, and each loadable patch features the individual samples mapped chromatically on the keyboard starting at C1 (two octaves below middle C).

Sustains Only contain the same twelve instruments as the Core Instruments, but remove all additional articulations apart from sustains and releases. They are much faster to load than the Core Instruments and use less RAM. They are useful for instances in which realism is less important than being able to simply orchestrate horn parts.



MOJO/ TIPS ON EFFECTIVE SEQUENCING

MOJO is an extremely complicated instrument, and without proper management, using it in a sequencing environment can be daunting. What follows is a list of tips that can make the use of MOJO much smoother.

TIP 01: At the beginning of each MIDI track that is triggering MOJO, write in the starting articulation keyswitch (e.g. sustain), the Players knob setting (solo or 2-10 players), and the Mode (poly, mono, or legato). This insures that every time you rewind your sequence to the beginning, the MOJO instrument will reset itself to the same starting point. The location of these keyswitches is different for each instrument in MOJO, therefore, you will save time by initially writing these "reset" commands at the beginning of the sequence so that MOJO can be reset at any time.

TIP 02: If you would like to sequence multiple solo lines of the same instrument (for example, four alto sax parts all playing legato), you can load up four instances of the Alto Sax instrument. This is useful if you require fluid legato playing for each of the four voices. Because all four instances are using the same set of core samples, the same amount of RAM is used whether you are running four Alto Sax instances or one.

TIP 03: Combining the previous two tips, if you have multiple instances of the same instrument, you can insert the reset commands for one instance, then copy and paste to the other three.

TIP 04: If you are writing large ensemble horns (e.g. big band style), you can get more realistic acoustic results by narrowing the stereo field of the individual instruments (Setup > Section > S Spread and S Depth, and/or Effects > Stereo > Spread), then panning the overall instrument to a specific location in the stereo field. If you don't apply this technique, then all instruments will appear to be located everywhere in the stereo field, which makes for a nice fat sound but is not the way a true ensemble would sound unless recorded from a great distance. Experiment with stereo placement to get the results you want.

TIP 05: When sequencing very short notes, experiment not just with staccato and stab articulations, but also with sustain and bend down articulations played very short. The playing style is very different for each. Sustains and bend downs played short tend to be more pitched and fit well in a section, while staccatos and stabs tend to have more bite, aggressiveness, and are the exclamation mark of the articulations. Try each of these articulations to find the best fit for the passage of music being worked on.

TIP 06: If you are using a release articulation (e.g. a fall) following a staccato or stab articulation, note that the fall will trigger when the note is released, not when the sound of the staccato or stab finishes. Therefore, it's crucial to adjust the location of the note-off message (the end of the MIDI note) to coincide with where the fall should begin.

TIP 07: If you are sequencing fast big band music and need sloppy doubling, try loading multiple versions of each instrument, then try setting each instance to different articulations, such as sustain, bend down, stab, and staccato. While the stab and staccato articulations will be very short, the sustain and bend down articulations will provide the sustain, and the end result will be four players playing in very different styles.

TIP 08: Sections will often benefit from a constantly added very slight amount of vibrato. Since the vibrato is applied per player, it will add another human factor to the section.

	TROMBONE	TROMBONE MUTE	BASS TROMBONE	BARI SAX
Play Mode /				
Poly	A-1	A-1	A-1	A-1
Solo	A#1	A#1	A#1	A#1
Mono	B-1	B-1	B-1	B-1
Section	C0	C0	C0	C0
Legato	C#0	C#0	C#0	C#0
Articulation /				
Sustain Vibrato	-	-	-	C7
Sustain	B6	B6	B6	B6
Bend Down	A#6	A#6	A#6	A#6
Run Octave Down	-	-	-	D6
Run Octave Up	-	-	-	C#6
Stab	A6	A6	A6	A6
Staccato	G#6	G#6	G#6	G#6
Doit	C6	C6	C6	C6
Trill	G6	G6	G6	G6
Swell Short	F#6	F#6	F#6	F#6
Swell Long	F6	F6	F6	F6
Cresc. Short	E6	E6	E6	E6
Cresc. Long	D#6	D#6	D#6	D#6
Overblown	-	-	-	B5
Overblown Vibrato	-	-	-	-
Sub Tone	-	-	-	F5
Rise To Hit	-	-	-	G#5
Slur Up	G5	-	-	G5
Shakes	-	-	-	-
'Pow'	A5	A5	A5	A5
Release Articulation /				
Regular	D0	D0	D0	D0
Doit	D#0	D#0	D#0	D#0

Fall Short	E0	E0	E0	E0	
Fall Medium	F0	F0	F0	F0	
Fall Long	F#0	F#0	F#0	F#0	
Fall Extra Long	G0	G0	G0	G0	
Trill	G#0	G#0	G#0	G#0	
None	A0	A0	A0	A0	
Slur Up	A#0	A#0	A#0	A#0	
Shakes	C1	C1	C1	C1	
Play Range /					
Minimum	C#2	C#2	C#2	C#2	
Maximum	G#4	G#4	G#4	G#4	

KEYMAPPING, ARTICULATIONS, AND KEYSWITCHES

Each instrument has been mapped on the keyboard at its actual sounding range. In other words, this means that a bass trombone will be at the lower end of the keyboard while the piccolo trumpet will be at the upper end of the keyboard.

Each instrument includes silent triggers called keyswitches which don't make a sound but instead instruct the engine to activate a specific articulation or behavior. The location of the keyswitches varies from instrument to instrument since the range of each instrument varies.

This guide will specify what keyswitches and available playing ranges exist for each instrument. Note that the onscreen display is also a helpful guide; it will show each keyswitch pressed and indicate its function, so it is less necessary to constantly refer to this manual.

All of the bass/lower instruments (bari sax, bass trombone, trombone, and trombone mute) share a very similar keyswitch articulation layout. The only way in which they differ is with some of the extra articulations which may or may not be available in certain instruments.

	ALTO SAX	CLARINET	FLUGELHORN	PICCOLO TRUMPET	SOPRANO SAX	TENOR SAX	TRUMPET MUTE	TRUMPET
Play Mode /								
Poly	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
Solo	A#1	A#1	A#1	A#1	A#1	A#1	A#1	A#1
Mono	B-1	B-1	B-1	B-1	B-1	B-1	B-1	B-1
Section	C0	C0	C0	C0	C0	C0	C0	C0
Legato	C#0	C#0	C#0	C#0	C#0	C#0	C#0	C#0
Articulation /								
Sustain Vibrato	C7	-	-	-	C7	C7	-	-
Sustain	B6	B6	B6	B6	B6	B6	B6	B6
Bend Down	A#6	A#6	A#6	A#6	A#6	A#6	A#6	A#6
Run Octave Down	D6	D6	D6	D6	D6	D6	D6	D6
Run Octave Up	C#6	C#6	C#6	C#6	C#6	C#6	C#6	C#6
Stab	A6	A6	A6	A6	A6	A6	A6	A6
Staccato	G#6	G#6	G#6	G#6	G#6	G#6	G#6	G#6
Doit	C6	C6	C6	C6	C6	C6	C6	C6
Trill	G6	G6	G6	G6	G6	G6	G6	G6
Swell Short	F#6	F#6	F#6	F#6	F#6	F#6	F#6	F#6
Swell Long	F6	F6	F6	F6	F6	F6	F6	F6
Cresc. Short	E6	E6	E6	E6	E6	E6	E6	E6
Cresc. Long	D#6	D#6	D#6	D#6	D#6	D#6	D#6	D#6
Overblown	B5	-	-	-	-	B5	-	-
Overblown Vibrato	A#5	-	-	-	-	A#5	-	-
Sub Tone	F5	-	-	-	-	F5	-	-
Rise To Hit	-	G#5	G#5	G#5	G#5	G#5	G#5	G#5
Slur Up	-	-	-	-	-	G5	-	-
Shakes	-	-	-	-	-	-	F#5	F#5
'Pow'	A5	A5	A5	A5	A5	A5	A5	A5
Release Articulation /								
Regular	D0	D0	D0	D0	D0	D0	D0	D0
Doit	D#0	D#0	D#0	D#0	D#0	D#0	D#0	D#0

Fall Short	E0	E0	E0	E0	E0	E0	E0	E0
Fall Medium	F0	F0	F0	F0	F0	F0	F0	F0
Fall Long	F#0	F#0	F#0	F#0	F#0	F#0	F#0	F#0
Fall Extra Long	G0	G0	G0	G0	G0	G0	G0	G0
Trill	G#0	G#0	G#0	G#0	G#0	G#0	G#0	G#0
None	A0	A0	A0	A0	A0	A0	A0	A0
Slur Up	-	-	A#0	A#0	-	-	A#0	A#0
Shakes	-	-	-	-	-	-	C1	C1
Play Range /								
Minimum	C#2	C#2	C#2	C#2	C#2	C#2	C#2	C#2
Maximum	G#4	G#4	G#4	G#4	G#4	G#4	G#4	G#4

All of the other instruments (alto sax, clarinet, flugelhorn, piccolo trumpet, soprano sax, tenor sax, trumpet, and muted trumpet) likewise share a very similar keyswitch articulation layout:

Users who want to customize the keyswitch arrangement can do so by clicking on the Keyswitch tab, which shows a list of keyswitches available in the current instrument, along with the ability to scroll up and down the list, and a quick MIDI Learn button to reassign any keyswitch. Customized keyswitch menu **> [01]**

01



MOJO/ MIDI CC CHART

Global Parameters /
007: Volume
010: Pan
011: Expression (SV)

Vibrato /
001 Vibrato Strength
020 Vibrato Character
021 Vibrato Speed

Sectioning /
022 Section Players
023 Section Stereo Spread
024 Section Mode
025 Section Depth
026 Section Detune
027 Section Humanize

Pitch Bend /
028 Pitch Mode (S/FC)

Legato /
039 Legato1 XTime
040 Legato1 BTime
041 Legato1 Dynamic
042 Legato1 Quality
043 Legato1 Type
044 Legato1 Cent
045 Legato1 Octave
046 Legato1 TurnOff
047 Legato2 TurnOff
048 Legato2 XTime
049 Legato2 BTime
050 Legato2 Dynamic
051 Legato2 Quality
052 Legato2 Type
053 Legato2 Cent
054 Legato2 Octave
055 Legato3 XTime
056 Legato3 BTime
057 Legato3 Dynamic
058 Legato3 Quality
059 Legato3 Type
060 Legato3 Cent
061 Legato3 Octave

Miscellaneous /
062 Humanize
063 Humanize Range
064 Sustain Pedal
065 Sample Set
064 Character

Distortion /
089 On / Off
090 Output Gain
091 Drive
092 Damping

Chorus /
093 On / Off
094 Return Gain
095 Depth
096 Speed
097 Phase

Reverb /
098 On / Off
099 Return Gain
100 Pre Delay
101 Size
102 Colour
103 Damping
104 Stereo

Delay /
105 On / Off
106 Return Gain
107 Time
108 Damping
109 Pan
110 Feedback

Stereo Modeler /

029 Pitch Range (S)
030 Pitch Range (FC)

Releases /
031 Release Mode
032 Release Volume

Tempo-Syncing /
033 Crescendo Speed Long
034 Crescendo Speed Short
035 Swell Speed Long
036 Swell Speed Short

EZRoom /
037 EZRoom Wet Volume
038 EZRoom Dry Volume

067 Punch
068 Punch Mode

Equalizer /
070 On / Off
071 Low Freq
072 Mid Freq
073 High Freq
074 Low Bw
075 Mid Bw
076 High Bw
077 Low Gain
078 Mid Gain
079 High Gain

Compressor /
080 On / Off
081 Output Gain
082 Thresh.
083 Ration
084 Attack
085 Release

Saturation /
086 On / Off
087 Output Gain
088 Saturation

011 On / Off
112 Output Gain
113 Spread
114 Pan

Limiter /
115 On / Off
116 Output Gain
117 In Gain
118 Release

LOCATED ABOVE ^

Many parameter in MOJO's various menus can be controlled remotely via MIDI CC, and therefore can be easily automated in a sequencer. This is a comprehensive list of the CC's that MOJO responds to.

KEY: SV = Secondary Volume / S = Standard / FC = Format Correct

MOJO/ TECH SUPPORT ETC.

TECH SUPPORT

Vir2 Instruments stands behind its products and is committed to helping you get the most out of using them. Please check the Support area of the www.vir2.com web site if you encounter any difficulties in using the product. You may also e-mail support@vir2.com.

Before getting in touch with Vir2 Instruments regarding problems with the product, make sure you are running the latest versions of the library, engine, and Service Center. We are continuously up-dating and improving the product, so it is possible that there are more recent updates available that were released after the physi-cal manufacturing of your installation disc.

THE FULL VERSION OF KONTAKT 3

MOJO ships with Kontakt 3 running in library mode, meaning it is fully able to play back the MOJO library and access the parame-ters detailed in this manual.

Registered owners of MOJO are eligible for a special crossgrade discount to the full version of Kontakt 3, which enables users to create their own libraries, import libraries in non-Kontakt formats,

and access numerous deep editing features. Visit the nativeinstruments.com web site for details on the Kontakt crossgrade.

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THANKS AND ENJOY/

Produced by Vir2 Instruments

Sound Design and Programming: David Das, Rich Mendelson, Steven Bolar, Chris Peck, and Benjamin Stelzer

Scripting: Benjamin Stelzer

Cover Artwork: Marvin Burns

Design: Jesse Amborn

Manual: David Das and Benjamin Stelzer

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